Before the Federal Communications Commission Washington, D.C. 20554

In the Matter of

Technological Transition of the Nation's Communications Infrastructure

GN Docket No. 12-353

COMMENTS OF PUBLIC KNOWLEDGE

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SUMMARY

AT&T correctly points out in its Petition that the time has come for the Commission to formulate a comprehensive approach to the ongoing upgrade of the existing telephone system from a circuit-switched system to an Internet protocol (IP) based system.¹ The National Telecommunications Cooperative Association (NTCA) correctly points out in its Petition that this transition requires no radical reconstruction of the Communications Act and the basic framework it creates for the proper administration of our national telecommunications infrastructure.² The "Public Switched Telephone Network" (PSTN) has undergone numerous technological transformations in the past. The framework of the Communications Act has, for the last 75 years, worked to guarantee "to all the people of the United States" a "rapid, efficient, Nation-wide and world-wide wire and radio communication service with adequate facilities at reasonable charges," which set the gold standard for the world to follow.³

We stand at the current crossroads not because the Commission lacks authority to act, but because the Commission refuses to act. AT&T is absolutely right to demand certainty as it embarks on a multi-billion dollar upgrade of its systems. This lack of certainty comes because the Commission has failed to resolve the numerous proceedings pending before it that would answer the fundamental questions of the IP transition.⁴ In particular, the FCC's stubborn refusal

¹ See Petition to Launch a Proceeding Concerning the TDM-to-IP Transition of AT&T Inc., Comment Sought on the Technological Transition of the National Communications Infrastructure, GN Docket No. 12-353 (Nov. 7, 2012).

² Petition of the National Telecommunications Cooperative Association for a Rulemaking to Promote and Sustain the Ongoing TDM-to-IP Transition, *Comment Sought on the Technological Transition of the National Communications Infrastructure*, GN Docket No. 12-353 (Nov. 19, 2012).

³ 47 U.S.C. § 151.

⁴ See Connect America Fund, WC Docket No. 10-90; A National Broadband Plan for Our Future, GN Docket No. 09-51; Establishing Just and Reasonable Rates for Local Exchange

to classify voice-over IP services (VoIP), or at least facilities-based "interconnected" VoIP, as a Title II telecommunications service has created a confusing hodge-podge of asymmetric responsibilities of dubious enforceability. The treatment of identical services turns too often on irrelevant differences in technology or provider. This invites arbitrage and confusion, privileges some providers while disadvantaging others, and leaves consumers vulnerable to abusive billing practices and shoddy service. Whatever virtue existed in delaying critical decisions to another day has clearly ended. The IP transition is no longer a hypothetical matter taking place in the distant future. It is upon us.

A New Approach for the 21st Century: The Technology Changes, But the Needs and Goals Remain the Same.

The AT&T Petition provides an opportunity for a fresh approach. On the one hand, we must not make a fetish of IP and fiber. The time has come to blow away the IP "pixie dust" that has magically obscured critical policy questions. The time has come for concrete answers. How

Carriers, WC Docket No. 07-135; High-Cost Universal Service Support, WC Docket No. 05-337; Developing an Unified Intercarrier Compensation Regime, CC Docket No. 01-92; Federal-State Joint Board on Universal Service, CC Docket No. 96-45; Universal Service Reform – Mobility Fund, WT Docket No. 10-208; IP-Enabled Services, WC Docket No. 04-36, Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities, CC Docket No. 02-23; Framework for Broadband Internet Service, GN Docket No. 10-127; Petition for Declaratory Ruling that tw telecom inc. Has the Right to Direct IP-to-IP Interconnection Pursuant to Section 251(c)(2) of the Communications Act, as Amended, for the Transmission and Routing of tw telecom's Facilities-Based VoIP Services and IP-in-the-Middle Voice Services, WC Docket No. 11-119; Petition of USTelecom for Forbearance Under 47 U.S.C. § 160(c) From Enforcement of Certain Legacy Telecommunications Requirements, WC Docket No. 12-61; Cheyond, Inc. Petition for Expedited Rulemaking to Require Unbundling of Hybrid, FTTH, and FTTC Loops Pursuant to 47 U.S.C. § 251(c)(3) of the Act, WC Docket No. 09-223; Petition for Expedited Rulemaking to Adopt Rules Pertaining to the Provision by Regional Bell Operating Companies of Certain Network Elements Pursuant to 47 U.S.C. § 271(c)(2)(B) of the Act, WC Docket No. 09-222; Policies and Rules Governing Retirement Of Copper Loops by Incumbent Local Exchange Carriers, BridgeCom International, et al., Petition for Rulemaking and Clarification (filed Jan. 18, 2007); Petition of XO Communications, LLC, et al., for a Rulemaking to Amend Certain Part 51 Rules Applicable to Incumbent LEC Retirement of Copper Loops and Copper Subloops, RM-11358.

will we guarantee service to all Americans? How will we continue to foster competition? How will we protect consumers? How will we make sure the new IP-based network actually *works*, reliably and repeatedly, in calm times and in crisis? The technology changes, but the needs and goals remain the same.

At the same time, we must not alternatively make a fetish of copper. We must not keep rules simply because they are trusted and familiar. We must recognize that the environment and the technology now available call for a different set of approaches to the same needs and goals. The Commission must carefully consider what rules and practices further the fundamental goals of the Communications Act—service to all Americans, competition, consumer protection, reliability, and public safety—and what rules no longer serve these goals. We must remember that the rules are the means to achieve these goals, not an end in and of themselves.

Accordingly, at this early stage, the Commission should focus first and foremost on the appropriate framework. In the 100 years since AT&T entered into the Kingsbury Commitment with federal antitrust enforcers, the Social Contract between telecommunications and society at large has created a framework that made the United States the envy of the world. Congress formalized this Social Contract in the Communications Act of 1934. As the law of the land, the Commission has the responsibility to ensure the enforcement of the Social Contract. But more fundamentally, the five essential principles of our Social Contract remain as timely today as they did 100 years ago. Technology changes, but the needs and goals remain the same.

The Framework of Five Fundamentals: Service to All Americans, Interconnection and Competition, Consumer Protection, Network Reliability, and Public Safety.

The framework of the Act serves us so well because it recognizes that the fundamental *needs* of the country and the obligations of the Social Contract remain the same, even as the technology continues to evolve and its promise to positively transform our lives becomes ever

greater. Looking to the Act, we find five essential principles that form the bedrock of the Act and the foundation of its success: service to all Americans, interconnection and competition, consumer protection, network reliability, and public safety.

Service to all Americans. First and foremost, the Commission must ensure that the benefits of these technologies flow to all Americans – regardless of "race, color, religion, national origin, or sex." The principle of service to all Americans applies whether they live in rural areas or urban areas. It applies to those with any physical disability that would interfere with communication. This principle requires that the Commission make sure that a basic level of service remains affordable to all Americans regardless of their level of income. Whatever happens, we must not become the first industrialized nation in the world to retreat from our commitment to truly universal service.

Interconnection and competition. The duty to interconnect first arose as a means of ensuring service in rural areas in the days of the old AT&T monopoly when rural cooperatives, municipalities, and local businesses brought service to places AT&T found too expensive to serve itself. Later, as amendments to the Act shifted our national policy from regulated "natural monopoly" to encouraging competition among competing networks, interconnection became the sine qua non of fostering and developing competition. Unless we propose to return to the days of regulated natural monopoly, the Commission must absolutely guarantee that competing networks will continue to accept each other's traffic and terminate each other's calls in a manner that both preserves call quality throughout the country and actively promotes a robust and competitive environment.

⁵ 47 U.S.C. § 151.

In particular, subscribers to different networks must not find themselves the victims of "peering disputes" that cut off communications and vital services. If NBC and AT&T have a retransmission dispute and AT&T video subscribers lose NBC programs, that is annoying. But if Comcast and AT&T have a "peering dispute" and millions of AT&T wireless customers can't call Comcast landlines, that is a disruptive disaster. It is not enough to speculate that incentives will prevent such a thing from occurring. The Commission must retain adequate authority to make sure that such an event is *impossible*.

Consumer protection. Competition does not guarantee consumer protection. From the privacy of phone calls to truth-in-billing to slamming and cramming, Americans rely on a web of regulation to provide adequate protection when they communicate with one another. The Commission must ensure that consumers remain adequately protected—including effective recourse for the timely resolution of complaints—throughout and after the IP transition.

Network reliability. Above all else, Americans rely on their communications networks to work consistently and reliably. When a subscriber picks up a phone and dials a phone number, the call gets placed. This happens so often so effortlessly (from the subscriber perspective) that we forget the complex system of interactions and regulations that make this happen with utter reliability time after time. Even so basic a matter as access to and distribution of phone numbers relies on a set of rules and assumptions that are increasingly under pressure from the conflict between the assumptions of the circuit-switched world and the realities of the IP-network. Above all else, a successful transition means that phone numbers still work and calls still go through with the same reliability they do today.

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⁶ See, e.g., In the Matter of Petitions for Waiver of Commission's Rules Regarding Access to Numbering Resources, Petition of Bandwidth.com, Inc. for Limited Waiver of Section 52.15(g) of the Commission's Rules Regarding Access to Numbering Resources, CC Docket No. 99-200 (June 13, 2012).

Recent events have called into question the reliability of IP networks as compared to traditional TDM-based systems. The Commission has already begun an inquiry into the performance of all our telecommunications networks in the wake of Hurricane Sandy. But even the basics of network reliability remain uncertain in the IP world. For example, last week AT&T experienced an outage of its U-Verse system that left tens of thousands of customers without basic phone service for days. Such outages would be unacceptable in the TDM-based circuit-switched world, subject to investigation by state and federal regulators to ensure that they do not happen again. Such outages must become equally unacceptable in the IP world.

Public Safety. Finally, as the Commission and Congress have repeatedly recognized, Americans rely on 9-1-1 daily to call for help in time of need. The Commission has already begun to look to the future with the Next Generation 9-1-1 transition. The conversion to an all IP network must enhance this transition and otherwise facilitate emergency communications. This includes ensuring that the thousands of alarm systems and alarm system standards that rely on access to a "telephone line" are not disrupted by the transition.

These five principles of service to all Americans, interconnection and competition, consumer protection, network reliability, and public safety provide both a foundation for the transition and a checklist for the Commission to measure all other proposals. For any transition proposal, the FCC must consider its impact in these five core areas. If a proposal would result in Americans becoming unserved as a result of the transition, or if a proposal would in any way compromise competition, consumer protection, network reliability, or public safety, the

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⁷ Public Notice, FCC Announces Date and Locations for the First Post-Superstorm Sandy Field Hearing, DA 13-19 (Jan. 8, 2013),

http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db0108/DA-13-19A1.pdf.

⁸ Brian X. Chen, *AT&T's TV, Phone and Internet Service Is Down in Some States*, N.Y. TIMES (Jan. 23, 2013), http://bits.blogs.nytimes.com/2013/01/23/atts-tv-phone-and-internet-service-is-down-in-some-states/.

Commission should reject it. By contrast, proposals that advance and enhance these fundamental principles should be adopted.

Commission Authority And The Course of the Transition

In the interest of moving forward, Public Knowledge will not reiterate the numerous arguments pro and con with regard to regulatory classification. In keeping with the nature of these very generalized Petitions, Public Knowledge does not think it is necessary, at this point in time, to resolve the question of legal authority. It is enough to know what must be done, and that the Commission has adequate authority under the Act to get there.

Those who seek to use this transition to entirely eliminate Title II, however, must explain what alternate authority they propose to meet the same needs and goals. The obligations of the Social Contract remain, regardless of changes in technology. The Commission *could* achieve these mandatory ends through classification of VoIP, or other services, as telecommunications under Title II. Indeed, it may emerge that the *only* way the Commission can fulfill its obligations is to classify some IP-based service, or combination of services, as Title II. However, if these goals can be adequately achieved in some way other than by Title II classification, the Commission should consider these approaches as well.

What would be unacceptable, however, would be for the Commission to compromise on any of the Five Fundamental Principles because it refuses to exercise the authority it has. The Commission is not free to say "Well, we could protect consumers through truth-in-billing rules, but only if VoIP were Title II. Unfortunately, since we don't want to classify VoIP as Title II, consumers are out of luck." If it emerges that the *only* way to adequately protect consumers, or to adequately ensure service to all Americans, or to protect interconnection or network reliability, is to classify VoIP or other services as Title II, then that is what the Commission must do. Those

who oppose any classification of anything as Title II therefore bear the burden to show that alternate approaches to Commission authority provide as certain a legal foundation for the Five Fundamentals as Title II classification.

Proposed "Trial Runs"

As noted above, Public Knowledge has focused primarily on the appropriate framework for the Commission to move forward. This is in no small part because the "Petitions" themselves simply propose frameworks. They lack the specificity required for a detailed rulemaking. This is not intended as a criticism of either AT&T or NTCA. To the contrary, as noted above, it lies squarely with the FCC to assert leadership and manage the transition in a manner that provides all parties with certainty and a road map for moving forward.

Nevertheless, one specific proposal by AT&T requires a brief mention. AT&T proposes to conduct "regulatory experiments" of some kind. While certain to attract much attention (and opposition), Public Knowledge believes this proposal is simply too ill defined for meaningful comment at this stage. On the one hand, it is easy to see how technical trials to establish service equivalency or best practices for conversion to IP might require some form of limited regulatory relief. On the other hand, going to the other extreme, no one can seriously imagine that a two year "regulatory free zone" would provide much evidence of anything other than that AT&T can behave for two years when it knows regulators are scrutinizing its behavior.

If AT&T is serious about conducting any experiments, it must provide a detailed description of its proposed "experiment" and what specific things the FCC and state regulators would learn as a consequence. This would include what regulations need suspension, why these regulations need suspension, how customers and competitors would be adequately protected during the "experiment," what metrics the FCC and state regulators would apply, and what

would be the desired outcome. Only in fiction do mad scientists conduct unregulated "experiments" to "see what happens," and even then it rarely ends well. Before AT&T can be permitted to experiment with our national infrastructure, it must present a much more detailed research proposal.

Role of State And Local Regulators

Finally, Public Knowledge notes that state and local regulators have played a fundamental role in the proper functioning of our national communications infrastructure. The Communications Act explicitly recognizes this, assigning proper roles to each level of government.

The transition to an all IP network should not disrupt this important relationship. Again, the technology changes, but the needs and goals remain the same. Many decisions with regard to the Five Fundamental Principles require local tailoring to the specific facts on the ground. These are decisions that state and local authorities are far better suited to making than a distant federal authority. Nor could the FCC realistically hope to absorb the volume of day-to-day issues that arise on a regular basis—from consumer complaints to interconnection issues to managing local 9-1-1 resources—that are currently handled on the local level. Accordingly, the Commission should resist calls to preempt local authority simply for the sake of having a "uniform" national policy. At the same time, in those places where state legislatures have preempted their own authority, the Commission must step in to ensure that the five fundamental goals of the Act are met. The FCC is not a substitute for local regulators, but it is a necessary backstop and last resort for all Americans.

New Rules, Same Foundation: A Roadmap To A Better World

Public Knowledge believes that the proceeding begun by the Commission with this notice provides a unique opportunity to wipe the slate clean of past bad decisions and no longer needed rules alike. The FCC has the opportunity to harmonize our crazy patchwork of technology-based policies, and provide all Americans with the 21st Century network we both need and deserve. If we follow the road map set out by the Communications Act, one which rests on the Five Fundamental Principles outlined above, we can ensure that the next 100 years of the Social Contract will serve us as well as the first 100 years.

ARGUMENT

I. The Petitions Submitted to the Commission on the PSTN Transition.

Good points are raised by all of the filings submitted to the Commission on the PSTN transition thus far, not least of which is the call from both the NTCA and AT&T Petitions for the Commission to begin a conversation about the implications of the shift from TDM-based technology to an IP-based phone network. The Commission must note, however, that neither of these Petitions sets out a clear plan for action, and so the Commission should take both Petitions as the beginning of a dialogue, for which it is the responsibility of the Commission to frame the debate for government, public interest, and industry participants.

The NTCA's filing is right to emphasize that the Commission must first and foremost ensure that the post-transition phone network continues to protect consumers, promote competition, and achieve universal service. The Commission's main focus here should be ascertaining the right rules for the upgraded network, given the needs of users and the ability of

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⁹ Petition of the National Telecommunications Cooperative Association for a Rulemaking to Promote and Sustain the Ongoing TDM-to-IP Transition, *Comment Sought on the Technological Transition of the National Communications Infrastructure*, GN Docket No. 12-353, at 13 (Nov. 19, 2012).

improved technologies to serve those needs. In some areas existing rules may not make sense when applied to new technologies, but in other areas upgraded technology may present an opportunity to create more social benefit for all users or an increased need for consumer protections. The Commission must consider the complex interrelated issues raised by the PSTN transition and ensure that the new network will continue to serve the social needs of all Americans.

The NTCA is also correct that competition has suffered because of the Commission's refusal to act, both due to the lack of adequate rules governing offerings the Commission has deemed "information services," and the uncertainty created when it is unclear whether policies promoting competition will apply to upgraded networks.¹⁰

For its part, AT&T is right that the Commission should launch a proceeding to consider all of the issues relevant to this technological transition together. Public Knowledge also agrees that the Commission should aim to create uniform regulation, not asymmetric rules that favor one technology over another materially similar technology. The Commission must reexamine the efficacy of past assumptions as applied to the new technological landscape and craft a coherent, comprehensive approach to the regulatory environment.

AT&T's proposal for "regulatory experiments," however, is far too vague to even be considered a concrete proposal, and so it is unclear what benefits would actually come of such a program. AT&T has not explained what exactly this program will include, how long it will last, what useful data we can hope to learn from it, and what its parameters of success will be. A trial program may be designed to serve useful purposes like delineating carriers' obligations under

¹⁰ *Id.* at 3-4, 13.

¹¹ See Petition to Launch a Proceeding Concerning the TDM-to-IP Transition of AT&T Inc., Comment Sought on the Technological Transition of the National Communications Infrastructure, GN Docket No. 12-353 (Nov. 7, 2012).

section 214,¹² but a program that serves only to give a very limited view of the best possible outcome of deregulatory zones without exploring the many possible ramifications of such a move over a broader geographic and temporal frame would be decidedly unhelpful. As described, the trial run could not possibly provide enough useful data on the full scope of consequences of the Commission abdicating authority over the network in the short amount of time it would have to collect data. All of the many events that could possibly trigger FCC authority cannot be expected to arise within a program that has yet to even be defined. Until AT&T has described this program in concrete terms that shed light on the how such a program would operate and what it could reasonably be expected to demonstrate, the Commission should not rely on the vague notion of a temporary program to shed meaningful light on the vast number of policy implications of the PSTN transition.

Both of the submitted Petitions raise useful points as the Commission begins the dialogue addressing the transition of the PSTN. The Commission should indeed begin a broad conversation with the goal of reaching technology-neutral principles and rules that create the most social surplus for users across the country. However, the Commission should not distract itself with vaguely described pilot programs with no promise of unveiling materially useful information, but should instead focus on developing rules for the upgraded PSTN that continue to serve the Five Fundamental Principles for the benefit of all Americans.

II. The Five Fundamental Principles of Our Communications Network

As the Commission's official inquiry into this technological transition begins, the Commission's overriding responsibility is to ensure that the rules governing the network continue to protect and serve the social needs of all Americans. As carriers update the technology

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¹² 47 U.S.C. § 214.

upon which the phone network operates, the basic social obligations of carriers to the public do not fade away. After all, the fundamental purpose of the Commission is to regulate "communication by wire and radio so as to make available, so far as possible, to all the people of the United States, without discrimination on the basis of race, color, religion, national origin, or sex, a rapid, efficient, nationwide, and world-wide wire and radio communication service with adequate facilities at reasonable charges, for the purpose of national defense, [and] for the purpose of promoting safety of life and property through the use of wire and radio communication "13

Distilling the responsibilities of Section 1 and other key provisions of the Act provides a foundation of Five Fundamental Principles: service to all Americans, interconnection and competition, consumer protection, network reliability, and public safety. The Commission should adopt this "Five Fundamentals" framework as the roadmap for negotiating a successful PSTN transition.

A. Providing Service to All Americans

The U.S. must not be the first industrialized nation to retreat from the goal of achieving 100% penetration of basic voice service. The Commission must determine how it will ensure that the U.S. continues its goal of providing service to all Americans, including through carriers of last resort and rural build-out. The Commission should especially consider how it will ensure that technology is deployed to traditionally marginalized communities in order to bring the social benefits of new technologies to those communities. This should include more than traditional anti-redlining rules. The FCC's Connect2Compete program¹⁴ and conditions requiring Comcast

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¹³ 47 U.S.C. § 151.

¹⁴ Connect2Compete, http://www.connect2compete.org/.

to make affordable broadband available to low-income users¹⁵ are two examples of relatively recent efforts to promote adoption. While not perfect by any means,¹⁶ these efforts represent a recognition that the public interest for the 21st Century goes beyond traditional concepts of deployment. Accordingly, part of this impending technological upgrade must include an upgrade of the Social Contract that recasts social needs in light of new technologies.

The law specifies that universal service encompasses "an evolving level of telecommunications services" and that the Commission should take into account "advances in telecommunications and information technologies and services" as it decides what universal service will look like for homes, schools, libraries, and health care providers across the country. Access to basic voice service reaps tremendous social and economic benefits to users, regardless of the material or technology used to transport the communications.

The Commission must now determine how it will continue to pursue the goal of 100% basic service for all Americans—regardless of location, income, or disability—when carriers increasingly stop maintaining their older, TDM-based facilities. Similarly, state carrier of last resort policies must be able to continue ensuring that all users are able to purchase reliable voice service under nondiscriminatory terms. These policies have in the past been based on a conception of all relevant carriers operating in some way on the traditional PSTN. Neither the make-up of the physical plant nor the protocols used to transport data on the network diminish

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¹⁵ Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc. for Consent to Assign Licenses and Transfer Control of Licensees, MB Docket No. 10-56, Memorandum Opinion and Order, ¶ 233 (Jan. 18, 2011).

¹⁶ See Amy Chozick, *Mixed Response to Comcast in Expanding Net Access*, N.Y. TIMES (Jan. 20, 2013), http://www.nytimes.com/2013/01/21/business/media/comcast-internet-essentials-brings-access-to-low-income-homes.html.

¹⁷ 47 U.S.C. § 254(c).

consumers' need for basic service—if anything, advances and new efficiencies in technologies may justify raising the standard for what is considered basic service.

Of course, in achieving this goal the Commission's current refusal to classify VoIP service will eventually hit center stage. The Commission has in the past relied upon its ancillary authority under Title I of the Act to create universal service contribution obligations for interconnected VoIP providers, ¹⁸ but has not made VoIP services eligible for funding for universal service. Although the Commission applied contribution obligations on interconnected VoIP providers for calls that did not actually touch the PSTN, it based its decision on the fact that interconnected VoIP services in general still offer the *capability* of reaching the PSTN. ¹⁹ This logic will become increasingly untenable as the PSTN upgrades to a system that looks more like interconnected VoIP than it does like the traditional PSTN—unless the Commission updates its understanding of what constitutes the PSTN. ²⁰

Similarly, in 2007 the Commission relied upon ancillary authority and its Title II jurisdiction²¹ to extend disability access requirements to interconnected VoIP providers and to manufacturers that design interconnected VoIP equipment, including requiring interconnected VoIP providers to contribute to the Interstate Telecommunications Relay Services fund and to offer 7-1-1 abbreviated dialing for relay services.²² But for these obligations to function, there

¹⁸ *Universal Service Contribution Methodology*, Report and Order and Notice of Proposed Rulemaking, 21 FCC Rcd. 7,518 (2006), *aff'd in relevant part sub nom.*, *Vonage Holdings Corp. v. FCC*, 489 F.3d 1232 (D.C. Cir. 2007) (creating universal service contribution requirements for interconnected VoIP providers).

¹⁹ *Id* at ¶ 36.

²⁰ Public Knowledge notes in this regard that nothing in the current definition of "public switched network" precludes VoIP. *See* 47 C.F.R. § 20.3.

²¹ See 47 U.S.C. § 225(b)(1).

²² *IP-Enabled Services*, WC Docket No. 04-36, WT Docket No. 96-198, CG Docket No. 03-123, CC Docket No. 92-105, Report and Order, 22 FCC Rcd. 11,275, 11,283-291, ¶ 17-43 (2007).

must at some point be an actual Title II telecommunications service upon which to base ancillary authority. In considering this issue, the Commission must be mindful of the continued needs for disability access services and rules in the post-transition PSTN.

One of the most important goals of communications policy in the United States is reaching universal service for all Americans across the country. The transition of the PSTN is an opportunity to expand and improve the communications service that all Americans receive, and the Commission must determine how it can continue to serve its statutory mandate as the traditional make-up of the PSTN changes.

B. Interconnection and Competition

The Commission must also determine how it will achieve interconnection and competition among providers post-transition. These policies are critical to creating and maintaining a functioning interconnected network and a robust competitive market for communications services.

Without adequate interconnection requirements, consumers may find themselves suffering from interconnection disputes between carriers that provide not just their video and internet access, but their voice service as well. And if the interconnections that have tied together our voice network unravel, dominant service providers will be able to leverage their customer base against competitors and control increasingly large shares of the market, resulting in higher prices and fewer choices for consumers.

The Act imposes upon telecommunications carriers "the duty to interconnect directly or indirectly with the facilities and equipment of other telecommunications carriers."²³ But it remains unsettled what this obligation would really mean in a world where the Commission has

²³ 47 U.S.C. § 251; see also 47 U.S.C. § 201(a).

treated broadband service as an information service and declined to classify interconnected VoIP at all.

As part of this inquiry, the Commission should also determine how reform of termination and access charges fits the broader equation. Rate-of-return carriers that serve rural areas and rural customers have reported increasingly poor phone service quality and increasingly frequent complaints indicating that calls are not all being delivered to or from rural areas. ²⁴ This prevents small businesses from offering prompt service, threatens to hinder emergency calls to or from public safety officials, and thwarts customers' efforts to communicate with loved ones. These complaints should be taken as a warning of things to come if the Commission does not ensure that interconnection requirements are adequately implemented and enforced for the post-transition PSTN.

The transition of the PSTN also calls into discussion the future of other rules and policies designed to encourage competition in the telephone service market. For example, the Commission has extended local number portability (LNP) obligations to VoIP providers so that VoIP customers may keep their North American Numbering Plan (NANP) telephone number when changing providers. LNP rules encourage competition by allowing consumers to respond to providers' price and service changes without losing their phone numbers. But the Commission relied upon its ancillary authority and statutory authority over the North American Numbering

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²⁴ Developing an Unified Intercarrier Compensation Regime, Establishing Just and Reasonable Rates for Local Exchange Carriers, CC Docket No. 01-92, WC Docket No. 07-135, Declaratory Ruling, ¶¶ 1-2 (W.C.B. 2012).

²⁵ Telephone Number Requirements for IP-Enabled Services Providers; Local Number Portability Porting Interval and Validation Requirements; IP-Enabled Services; Telephone Number Portability; CTIA Petitions for Declaratory Ruling on Wireline-Wireless Porting Issues; Final Regulatory Flexibility Analysis; Numbering Resource Optimization, Report and Order, Declaratory Ruling, Order on Remand, and Notice of Proposed Rulemaking, 22 FCC Rcd. 19,531 (2007).

Plan and over telecommunications carriers to extend the LNP rules to VoIP providers. At this juncture the Commission must ask itself: when the traditional PSTN is gone, what will happen to the NANP? How will the Commission sustain LNP rules to all phone service providers without revisiting the foundation of the NANP or classifying VoIP service?

As the PSTN transitions to new physical facilities and IP protocols, it is critical to the competitive future of the market that the Commission ensures carriers will continue to interconnect and rules will continue to promote competition in the marketplace to the benefit of consumers.

Of course, some of the issues that fall under the umbrella of interconnection and competition will also be relevant to the other main categories listed in these comments, such as network reliability and consumer protection. This is no accident: the critical issues and questions raised in each of these broad categories are part of a complex system of interdependent parts. Any one social need can implicate multiple categories, and each category attends to multiple social needs. This is why the Commission must decide upon a coherent basis of authority to ensure that all Five Fundamentals of the framework are served throughout this technological transition.

C. Protecting All Consumers

Consumer protection, truth-in-billing, and privacy principles must continue to ensure that the rules governing our communications networks respect the basic rights of consumers and prevent predatory practices by service providers.²⁶

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²⁶ See 47 U.S.C. § 202(a) ("It shall be unlawful for any common carrier to make any unjust or unreasonable discrimination in charges, practices, classifications, regulations, facilities, or services for or in connection with like communication service, directly or indirectly, by any means or device, or to make or give any undue or unreasonable preference or advantage to any particular person, class of persons, or locality, or to subject any particular person, class of persons, or locality to any undue or unreasonable prejudice or disadvantage."); 47 U.S.C. §

Section 222 of the Act safeguards consumer privacy by imposing upon every "telecommunications carrier" the obligation to protect the confidentiality of its customers' proprietary information.²⁷ The Commission has extended those rules to apply to interconnected VoIP providers as well, noting specifically: "[w]e emphasize that interconnected VoIP service offers the capability for users to receive calls from and terminate calls to the PSTN."²⁸ The Commission's Customer Proprietary Network Information (CPNI) obligations extend to calls that do not actually touch the PSTN, so long as those calls are made through interconnected VoIP providers.²⁹ In extending these rules to calls that do not actual run over the PSTN, the Commission relied upon its ancillary authority and reasoned that it "continue[s] to believe that consumers have a reasonable expectation that such services are replacements for 'regular telephone' service."³⁰

The Commission also protects users by enforcing slamming rules that prevent carriers from switching subscribers' services without permission.³¹ However, the Commission has explicitly stated that its slamming rules do not cover VoIP providers.³² Similarly, the

201(b) ("All charges, practices, classifications, and regulations for and in connection with such communication service, shall be just and reasonable, and any such charge, practice, classification, or regulation that is unjust or unreasonable is hereby declared to be unlawful.").

²⁷ 47 U.S.C. § 222.

²⁸ Implementation of the Telecommunications Act of 1996; Telecommunications Carriers' Use of Customer Proprietary Network Information and Other Customer Information; IP-Enabled Services, Report and Order and Further Notice of Proposed Rulemaking, 22 FCC Rcd. 6,927 ¶ 54 n.170 (2007), aff'd sub nom. Nat'l Cable & Telecom. Ass'n v. FCC, 555 F.3d 996 (D.C. Cir. 2009).

²⁹ *Id*.

 $^{^{30}}$ Id.

³¹ 47 U.S.C. § 258(a); 47 C.F.R. §§ 64.1100-64.1190.

³² See Verizon Complaint Regarding Unauthorized Change of Subscriber's Telecommunications Carrier, IC Docket No. 10-S29-1-1119, Order (June 26, 2012) (denying complaint that consumer

Commission has announced that it does not apply its cramming rules that prevent carriers from adding unauthorized charges to customers' phone bills to VoIP or commercial mobile radio service providers.³³ The Commission noted that it declined to extend cramming rules to VoIP providers in part because it had not received enough complaints of cramming on VoIP services, which suggests that cramming rules will surely become necessary for VoIP providers as more and more customers are moved from TDM-based phone services to VoIP or other IP-based phone services.

The Commission must not let its past refusal to classify interconnected VoIP and its past claim of authority over interconnected VoIP solely by virtue of its authority over the traditional PSTN prevent it from protecting consumers who are using what is simply an upgraded version of telephone service. As the PSTN begins to transition to IP protocols and other upgraded technologies, the Commission must come to terms with how it will continue to protect consumers post-transition. All signs indicate that consumer protection rules will be equally, if not more, important post-transition than they are today, and if anything the Commission will need flexibility to ensure that current and future consumer protection rules serve the same basic social needs as they do today. In a world with new and evolving technologies and unchanging basic needs for fair practices, the Commission must determine what the right rules are, and ensure that it can maintain and enforce those rules to protect all subscribers from predatory practices.

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had been involuntarily switched to Verizon's FiOS service because VoIP is not covered under the slamming rules).

³³ 47 C.F.R. §§ 64.2400-64.2401; *Empowering Consumers to Prevent and Detect Billing for Unauthorized Charges ("Cramming")*, CG Docket No. 11-116, *Consumer Information and Disclosure*, CD Docket No. 09-158, *Truth-in-Billing and Billing Format*, CC Docket No. 98-170, Report and Order and Further Notice of Proposed Rulemaking, ¶ 47 (Apr. 27, 2012).

D. Reliability

Throughout the development and evolution of the PSTN, the Commission must ensure that the nation's communications networks continue to operate consistently and offer adequate reliability in the case of unforeseen disasters. The Commission must inevitably consider how it will address basic network mechanisms that are today predicated on the notion of Title II phone service, like phone numbers. And post-transition, there will be no copper network safety net if the IP-based network fails, so the new technologies that underpin future networks must be expected to offer an adequate level of reliability in their own right.

The first and most fundamental criterion for network reliability is ensuring that basic network mechanisms will continue to function during and after the network's upgrade. The Commission must therefore determine how the fundamental mechanisms underlying the phone network today will continue to operate when the traditional PSTN technology no longer exists. The Commission currently exercises its authority over phone numbers³⁴ to distribute phone numbers through the North American Numbering Plan (NANP). Any VoIP providers that have not received a waiver permitting them to obtain numbers directly from a NANP Administrator must instead buy numbers through another carrier that uses the PSTN. This raises the stark and critical question: who will be able to obtain numbers when all carriers have transitioned to IP-based technology? How will phone numbers work in a world with no TDM-based PSTN? This is a question that the Commission absolutely must answer if the phone network as users now know it is to continue operating at all post-transition.

Just as IP-to-IP calls on interconnected VoIP services have begun to replace traditional PSTN service, IP-to-IP calls on interconnected VoIP services will replace traditional telephone

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³⁴ 47 U.S.C. § 251(e)(1).

services entirely when the PSTN no longer uses traditional copper lines and TDM technology. However, when the traditional PSTN network no longer exists, the Commission's claim that its authority over interconnected VoIP is ancillary to its authority over the traditional PSTN could no longer be sufficient, unless the Commission identifies and exercises a theory of authority that reaches interconnected VoIP directly, without relying on the existence of the traditional PSTN network.

Network reliability also encompasses the fundamental notion that the network must be able to withstand adverse circumstances and emergency situations while providing consistent service to those who need it. But as the PSTN increasingly relies upon the commercial power grid, it increasingly shares a common point of failure. In the newer IP-based networks, the line itself does not transmit both information and power, as the legacy PSTN originally did, and so the network cannot rely on battery and back-up power generators from a central office, which gave the historical PSTN significant robustness.³⁵

The full transition to IP protocols for the PSTN can further reduce robustness in the network. Managed network VoIP providers place electronics at the customer premises to make IP/analog conversions, and it is typically the responsibility of the customers to ensure that the backup batteries in their equipment are adequately charged.³⁶ This means that much of the

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³⁵ See David Gabel and Steven Burns, *The Transition from the Legacy Public Switched Telephone Network to Modern Technologies*, National Regulatory Research Institute, at 7-15 (Oct. 2012).

³⁶ David Gabel and Steven Burns, *The Transition from the Legacy Public Switched Telephone Network to Modern Technologies*, National Regulatory Research Institute, at 17-19 (Oct. 2012); Verizon, Backup Battery Unit (BBU) (last visited Jan. 17, 2013), http://www22.verizon.com/Support/Residential/tv/fiostv/general+support/new+to+fios+tv/questi onsone/121498.htm ("The BBU is connected directly to the ONT to provide backup power if it's needed. In addition, the BBU contains a series of indicator lights that tell you whether your service is being powered by your location's electricity or the battery. The BBU also indicates when the backup battery needs to be replaced."); AT&T, AT&T U-Verse Battery Backup (last

network equipment is now dependent upon the commercial power grid, and would fail within a matter of 6-10 hours in the case of a power failure, depending upon the battery back-up power used and maintained by each individual customer.

The impact of the transition to IP-based networks is unfolding before us in real time. After Hurricane Sandy, Verizon acknowledged that the storm caused outages in its FiOS voice, internet, and video services, 37 while users across the affected areas lined up outside to use pay phones connected to the copper network.³⁸ And in just the past two weeks, customers of AT&T's U-verse voice, internet, and video services suffered outages for days due to problems with a software upgrade.³⁹ As one customer hit by the outage put it, "You go on U-verse, and the old handy dandy landlines that would work no matter what? That's not happening any longer."⁴⁰ This, of course, is no new phenomenon. Outages by cable providers have been periodically denying subscribers their services for years.⁴¹

visited Jan. 17, 2013), http://www.att.com/u-verse/explore/battery-backup.jsp ("If you have AT&T U-verse services (voice, high-speed Internet, and/or TV), you must also have battery backup power for the Residential Gateway for your AT&T U-verse services to function during a power outage. AT&T will not provide support for, or be responsible for, ongoing maintenance or management of equipment, including the initial RG battery backup unit or the initial ONT backup battery provided to AT&T U-verse Voice customers.").

³⁷ See Jon Brodkin, Hurricane Sandy Also Disrupts Cellular Networks and Wired Internet, ARS TECHNICA (Oct. 30, 2012), http://arstechnica.com/information-technology/2012/10/hurricanesandy-also-disrupts-cellular-networks-and-wired-internet/.

³⁸ See Abby Ellin, Pay Phone Makes a Post-Sandy Comeback, ABC News (Nov. 1, 2012), http://abcnews.go.com/blogs/business/2012/11/pay-phone-makes-a-post-sandy-comeback/.

³⁹ Brian X.Chen, AT&T's TV, Phone and Internet Service is Down in Some States, N.Y. TIMES BITS BLOG (Jan. 23, 2013), http://bits.blogs.nytimes.com/2013/01/23/atts-tv-phone-and-internetservice-is-down-in-some-states/.

 $^{^{40}}$ Id

⁴¹ See Michelle Keahey, Cox Cable Subscribers File Class Action Over Outages Related to Hurricane Isaac, The Louisiana Record (Jan. 25, 2013), http://louisianarecord.com/news/248626-cox-cable-subscribers-file-class-action-over-outagesrelated-to-hurricane-isaac; Walter Pacheco, Bright House Networks Fixes Cable Outage,

We cannot rely upon carriers to voluntarily bear the expense of building robustness in the network themselves, in particular because carriers have not always voluntarily increased their network reliability in the past. For example, one study estimated that 75% of the power-related outages from 1996 to 2003 could have been avoided if carriers had followed the best system practices established by the Network Reliability Steering Committee. 42 Moreover, the decision of how reliable a network should be in the case of emergency is a question that is more properly within the purview of the government, which can consider what requirements will best serve the public interest.

This means that the Commission must determine how it can ensure that the posttransition PSTN continues to guarantee at least a minimum level of robustness, both for every day uses and in emergency circumstances, when users need communications services most. As the PSTN continues its upgrade to IP-based technology, the Commission must come to terms with how it will implement rules to ensure that consumers can make calls consistently and reliably on the phone network, throughout and beyond the network's transition.

E. Public Safety

Finally, public safety rules must be updated to ensure that emergency services like 9-1-1 and geolocation technologies continue to help first responders offer emergency care, regardless of whether the network that the customer uses is wireless or wireline, copper or fiber.

ORLANDO SENTINEL (Jan. 17, 2013), http://www.orlandosentinel.com/technology/blog/osorlando-bright-house-networks-cable-outage-20130117,0,5012652.post; Alex Sherman, Comcast Joins Cablevision in Offering Credits After Sandy, BLOOMBERG BUSINESSWEEK (Nov. 2, 2012), http://www.businessweek.com/news/2012-11-02/cablevision-offers-credit-to-customers-withoutpower-from-sandy; Don Reisinger, Time Warner Cable Gets Hit with 'Large' Outage, CNET (Nov. 7, 2011), http://news.cnet.com/8301-13506 3-57319625-17/time-warner-cable-gets-hitwith-large-outage/.

⁴² Kavitha Chayanam, Analysis of Telecommunications Outages Due to Power Loss, Master's Thesis, Ohio University, at 12, 14, 15 (2005).

Again, in this area the Commission has relied upon its ancillary authority to require VoIP providers to provide emergency 9-1-1 calling capabilities to consumers. The Commission has also subjected interconnected VoIP providers to the Communications Assistance for Law Enforcement Act (CALEA). In both decisions, the Commission relied upon the fact that interconnected VoIP services offer consumers the capability of receiving calls from and making calls to the PSTN.

When the traditional architecture of the PSTN no longer exists or is no longer used, it is crucial that the Commission ensures that consumers are able to contact emergency services at the moments when they need it most. The moments in which the public relies upon emergency services like 9-1-1 are literally life-or-death, and it is crucial that the Commission implements rules that maintain the public safety components of the phone network. To its credit, the Commission has already begun the process of creating a framework for next-generation 9-1-1 services, 45 but these issues must also be considered in the broader context of the overall shift of the PSTN to new technologies.

To the extent that the Commission has previously relied upon interconnected VoIP's connection to the PSTN, it can no longer do so when the traditional copper- and TDM-based PSTN has been retired. But letting life-saving public safety rules fade away with the old

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⁴³ *IP-Enabled Services*, First Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd. 10,245 (2005), *aff'd sub nom. Nuvio Corp. v. FCC*, 473 F.3d 302 (D.C. Cir. 2006) (requiring interconnected VoIP providers to offer emergency 9-1-1 calling capabilities).

⁴⁴ Communications Assistance for Law Enforcement Act and Broadband Access and Services, ET Docket No. 04-295, RM-10865, First Report and Order and Further Notice of Proposed Rulemaking, 20 FCC Rcd 14989, 14991-92, ¶ 8 (2005), aff'd, American Council on Education v. FCC, No. 05-1404 (D.C. Cir. June 9, 2006).

⁴⁵ See, e.g., Facilitating the Deployment of Text-to-9-1-1 and Other Next Generation 9-1-1 Applications, PS Docket No. 11-153, Framework for Next Generation 9-1-1 Deployment, PS Docket No. 10-255, Further Notice of Proposed Rulemaking (Dec. 12, 2012).

technology is not an option. The Commission must ensure that public safety rules continue to help consumers seek help in emergency situations, regardless of the protocols used by their networks when they do so.

F. Federal Legal Authority

There is no avoiding the fact that the Commission must have a theory of authority to address all of the important and interrelated issues raised by the PSTN transition. Public Knowledge submits that Title II is a clear source of authority that has always governed phone services. If those opposing the inclusion of basic social obligations in the next generation of phone service are not willing to accept the broad authority granted in Title II, they must explain how the Commission has any authority to carry out activities like administering phone numbers or distributing funds for build-out in under-served areas.

The Commission must at some point address its authority to implement the regulatory updates necessary to keep pace with technology and continuing social needs, but Public Knowledge will not at this point address the various arguments in detail. First, neither of the Petitions before the Commission at this time are best considered Petitions for Rulemaking, and what authority the Commission needs to carry out its responsibilities will depend upon the particular rule changes the Commission adopts and how the Commission interprets its governing statutes. It is enough, for the moment, to know that broad authority exists without needing to detail theories of authority for each possible path the Commission might take.

Public Knowledge will note, however, that when the Commission examines what authority it needs to continue protecting consumers and encouraging competition, it must square with the critical fact that if Title II authority is not included, the entire structure of the

Commission's ancillary authority will fall apart.⁴⁶ The Commission may be able to achieve much under its authority in provisions like section 214, but it is not clear whether the obligations imposed under those provisions could continue on indefinitely.

This is a question that should concern all involved in this conversation. For example, how would phone number administration and CPNI requirements continue without the assumption that the companies operating under the rules are in fact telecommunications carriers? Will commercial mobile radio services be considered common carriers if they no longer interconnect with the traditional PSTN? And any carrier that seeks to rely upon benefits created under ancillary authority without the obligations accompanying Title II service must explain what Title II service their benefits are actually ancillary to.

G. State and Local Authority

It is worth noting that across all of the above-mentioned categories, the question remains for the appropriate roles of federal and state regulators over the next version of the PSTN. State and local regulators have long played a vital role to the governance of the phone network, and they should continue to do so as carriers update their network technology.

The Communications Act explicitly recognizes and delineates the role of state and local governments in overseeing the proper functioning of the phone network. For example, section 214 grants to the State commissions the authority to designate eligible telecommunications

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⁴⁶ It also must be noted that at some point the Commission's discretion cannot override the actual text of the statute at issue, and the statutory definition of a telecommunications service as a provider of telecommunications directly to the public "regardless of the facilities used" cannot be ignored. *See* Communications Act of 1934, as amended, § 3, 47 U.S.C. § 153(46). Similarly, the Commission's regulations defining the "public switched network" are technology-neutral and include any common carrier switched network that uses the North American Numbering Plan. 47 C.F.R. § 20.3.

carriers and delineates authority between interstate services and intrastate services.⁴⁷ State and local governments also retain authority over aspects of pole attachments,⁴⁸ commercial mobile services,⁴⁹ and preventing harassing phone calls,⁵⁰ among many other duties. The Commission should recognize that the Act has wisely carved out a role for state and local governments in governance of the phone network, and should be wary of how its actions now could imprudently bypass those governments for the sake of one uniform policy for every aspect of the phone network.

For example, in 2004, the Commission preempted an order from the Minnesota Public Utilities Commission that applied phone regulations to Vonage's interconnected VoIP service, but did not classify interconnected VoIP as either a telecommunications or information service. As managed VoIP services become increasingly prevalent and the older TDM-based phone services fade away, the question inevitably arises of what regulatory authority remains with state authorities and where state authorities are best suited to craft, implement, and enforce rules that will achieve the most benefits for consumers and competition.

Even beyond state and local governments' expertise in and sensitivity to the needs of their respective geographic regions, the Commission must preserve the states' role as carved out in our communications law unless it wishes to take on the tremendous administrative burden that state and local governments handle every day. If the states no longer play a role in governing the

⁴⁷ 47 U.S.C. § 214.

⁴⁸ 47 U.S.C. § 224.

⁴⁹ 47 U.S.C. § 332(c)(3).

⁵⁰ 47 U.S.C. § 223(f)(2).

⁵¹ Vonage Holdings Corporation Petition for Declaratory Ruling Concerning an Order of the Minnesota Public Utilities Commission, WC Docket No. 03-211, Memorandum Opinion and Order, 19 FCC Red. 22,404 (2004).

phone network, it will be the Commission's sole responsibility to handle all of the interconnection issues, 9-1-1 administration, and consumer complaints—from billing to quality of service to fraudulent practices—that state and local governments currently handle every day. The Commission should not, and likely could not, absorb the influx of work that would come hand-in-hand with bypassing state and local governments, which is on its own reason enough to continue to recognize their vital role in governing the network.

State and local governments play an important role in the governance of the phone network, as is already recognized by the Communications Act. The Commission should be glad to recognize those areas where state and local governments are best suited to make locally-focused decisions and handle locally-based complaints. The Commission must therefore balance the need to ensure that the Five Fundamentals of the phone network are guaranteed to all Americans while acknowledging the appropriate role of state and local governments in governing the network.

CONCLUSION

As the Commission undertakes to address the transition of the PSTN, Public Knowledge urges the Commission to consider the critical and complex issues discussed in the above framework to ensure that the post-transition PSTN will continue to serve the basic social needs of all Americans.

Respectfully submitted,

PUBLIC KNOWLEDGE

January 28, 2013

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